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REMARKS

This paper responds to the Office action in the above-entitled application, mailed on May 18, 2006, and allowing three months for a response. This response is timely because it is being filed within the period set for response.

In response to the Examiner's continued objection to the drawings because FIG. 2B does not include item 205 as described in paragraph 35, the Applicant respectfully submits that paragraph 35 in the specification was previously amended to correct the item labeled 205 to read item 204 ("semaphore register 204"). Item 204 is currently included in FIG. 2B and therefore a correction to FIG. 2B need not be required.

The present application includes pending claims 1 - 33. Claims 9, 10, 18, 25, and 26 have been withdrawn. Claims 13 and 29 have been amended. Claims 34 - 38 have been added.

Claims 1, 2, 11, and 12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. ("Davis") in view of Baker et al. ("Baker"). Claims 13-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Baker, and further in view of Ando et al. ("Ando"). Claims 19, 20, 27, and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Baker. Claims 29-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Baker, and further in view of Ando. Claims 3, 6, 16, 17, 21, and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Baker, and

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further in view of Flynn et al. ("Flynn"). Claims 4, 5, 7, 8, 22, and 24 stand rejected under official notice. Claims 9, 10, 18, 25, and 26 stand objected to as being dependent upon a rejected base claim.

The Applicants will address all the points raised by the Examiner and demonstrate that the present invention is patentable. The Applicants respectfully traverse these rejections at least for the reasons discussed below.

I. Claims 9, 10, 18, 25, and 26 As Amended are Allowable Subject Matter

The Examiner has indicated that claims 9, 10, 18, 25, and 26 are allowable subject matter if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In this regard, the Applicant has withdrawn claims 9, 10, 18, 25, and 26 and respectfully submits that new claims 34 - 38 correspond to claims 9, 10, 18, 25, and 26 rewritten in independent form including all of the limitations of the base claim and any intervening claims and are allowable subject matter.

II. Claims 1, 2, 11, and 12 Are Patentable Over Davis in View of Baker

The Applicant has been asked to show that claims 1, 2, 11, and 13 in this case are non-obvious in view of the combination of the Davis and Baker references. The applicant respectfully submits that these claims are non-obvious, for the reasons provided below.

With regard to an obviousness rejection, Section 2142 of the MPEP states:

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"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure."

§ 2142 MANUAL OF PATENT EXAMINING PROCEDURE, 8th ed., Rev. 1 (Feb. 2003) [MPEP], Ch. 2100, p.124.

To reject claims in an application under section 103, an examiner must show an un rebutted *prima facie* case of obviousness. See In re Deuel, 51 F.3d 1552, 1557, 34 USPQ2d 1210, 1214 (Fed. Cir. 1995). In the absence of a proper *prima facie* case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

In re Rouffet, No. 97-1492, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. July 15, 1998).

"If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness." § 2142 MPEP, ch. 2100, p.121.

With regard to the third criterion of MPEP § 2142 set forth above, claim 1, from which claims 2, 11, and 12 are dependent, recites "using a limited-width test bus whose bus width contains less than a number of bits needed to individually address each of said plurality of semaphore registers," which the combination of the Davis and Baker

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references does not disclose. The rejected claims are non-obvious for this reason alone. Claim 1 also recites "monitoring contents of at least one of a plurality of semaphore registers," which the combination of the Davis and Baker references also does not disclose. The rejected claims are also non-obvious for this independent reason.

Additionally, with regard to the first criterion of MPEP § 2142 set forth above, there is no teaching, suggestion, or incentive for one of ordinary skill in the art to combine the Davis and Baker references or to modify the Davis reference as the Office Action proposes, to arrive at the present invention. The Baker reference is not pertinent to the problem of a method for monitoring hardware resources by using semaphore registers via a limited-width test bus addressed by the present invention. The Baker reference discloses a "technique for transmitting address information between a processor and a plurality of memory subsystems in a common bus communication system." See Baker at Abstract. The Baker reference utilizes a communication bus with fewer bytes than an address field because "only those bytes of a selected address which differ from the corresponding bytes of a previous address are transmitted sequentially for accessing a selected memory location." See Baker at Abstract. Moreover, Baker's reference is based on the fact that the "sequence of addresses generated by a processor has a [sequential] behavior that can be exploited to reduce the number of address bits transmitted." See Baker, column .1, lines 46 -50. Again, no teaching, suggestion, or incentive has been shown why it would be obvious to selectively apply the technique for utilizing a communication bus that transmits fewer address bytes than an address field

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contains, as disclosed in Baker, to the Davis reference to produce the claimed combination.

Obviousness cannot be established by combining pieces of prior art absent some "teaching, suggestion, or incentive supporting the combination."¹

"[V]irtually all [inventions] are combinations of old elements." Environmental Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); see also Richdel, Inc. v. Sunspool Corp., 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue.

In re Rouffet, No. 97-1492, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. July 15, 1998).

Where a combination invention can only be arrived at by combining various components described in separate prior art references, there must be some reason for the combination; a teaching, a motivation, an incentive, or a suggestion.²

The rejection depends upon the improper use of hindsight to re-create the presently claimed combination of elements. The invention is not obvious from the prior art itself.

¹ In re Geiger, 815 F.2d 686, 2 U.S.P.Q.2d 1276, 1278 (Fed Cir. 1987).

² In re Laskowski, 871 F.2d 115, 117, 10 U.S.P.Q.2d 1397, 1398-99 (Fed. Cir. 1989).

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One cannot use hindsight reconstruction, picking and choosing among isolated disclosures in the prior art, to deny that the claimed invention is unobvious.³

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.

In re Rouffet, No. 97-1492, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. July 15, 1998).

For at least the reasons provided, claims 1, 2, 11, and 12 are non-obvious in view of the cited prior art.

III. Claims 13-15 Are Patentable Over Davis in View of Baker and in Further View of Ando

The Applicant has been asked to show that claims 13-15 in this case are non-obvious in view of the combination of the Davis and Baker references and in further view of the Ando reference. The applicant respectfully submits that these claims, in view of claim 13, are non-obvious, for at least the reasons provided below.

With regard to the third criterion of MPEP § 2142 set forth above, the amended claim 13, from which claims 14 and 15 are dependent, recites "arranging a plurality of

³ *In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

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semaphore registers into a plurality of semaphore register blocks" which neither the Davis reference nor the Baker reference disclose, nor does the Ando reference make up for this deficiency. The rejected claims are non-obvious for this reason alone, notwithstanding the Davis reference, the Baker reference or the Ando reference. Additionally, the amended claim 13 also recites "selecting one of said plurality of semaphore register blocks to be accessed by a limited-width test bus for monitoring contents in said selected one of said plurality of semaphore register blocks," which the combination of the Davis reference, the Baker reference and the Ando reference does not disclose. The rejected claims are non-obvious for this additional independent reason, notwithstanding the Davis reference, the Baker reference or the Ando reference.

Furthermore, with regard to the first criterion of MPEP § 2142 set forth above, there is no teaching, suggestion, or incentive for one of ordinary skill in the art to combine the Davis, Baker and Ando references or modify the Davis reference as the Office Action proposes, to arrive at the present invention. Again, the Baker reference is not pertinent to the problem of a method for monitoring hardware resources by using semaphore registers via a limited-width test bus addressed by the present invention. In fact, neither is the Ando reference. The Ando reference discloses a "bus circuit of a precharging type [that] has an hierarchical structure comprising a higher rank bus and a plurality of lower rank buses connected in parallel thereto." See Ando at Abstract. FIG. 1 in the Ando reference discloses "register blocks 20₁, 20₂, 20₃, and 20₄ each further comprising a plurality of

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registers." See Ando, column 4, lines 8 - 11. However the registers in the register blocks disclosed in Ando are utilized as the source or destination of data transfer operations and not for being "accessed by a limited-width test bus for monitoring contents in said selected one of said plurality of semaphore register blocks" as the amended claim 13 recites.

For at least the reasons provided, claims 13-15 are therefore non-obvious in view of the cited prior art.

IV. Claims 19, 20, 27, and 28 Are Patentable Over Davis in View of Baker

The Applicant has been asked to show that claims 19, 20, 27, and 28 in this case are non-obvious in view of the combination of the Davis and Baker references. The applicant respectfully submits that these claims are non-obvious, for at least the reasons provided below.

With regard to the third criterion of MPEP § 2142 set forth above, claim 19, from which claims 20, 27, and 28 are dependent, recites a "limited-width test bus [that] contains less than a number of bits needed to individually address each of said plurality of semaphore registers," which the combination of the Davis and Baker references does not disclose. The rejected claims are non-obvious for this reason alone, notwithstanding the Davis and Baker references. Additionally, claim 19 also recites "a plurality of semaphore registers," which the combination of the Davis and Baker

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references does not disclose. The rejected claims are non-obvious for this additional independent reason, notwithstanding the Baker reference.

Furthermore, with regard to the first criterion of MPEP § 2142 set forth above, there is no teaching, suggestion, or incentive for one of ordinary skill in the art to combine the Davis and Baker references or modify the Davis reference as the Office Action proposes, to arrive at the present invention. Again, the Baker reference is not pertinent to the problem of a system for monitoring hardware resources by using semaphore registers addressed by the present invention. No reason has been shown why it would be obvious to selectively combine the technique for utilizing a communication bus that transmits fewer address bytes than an address field contains, as disclosed in Baker, to the Davis reference to produce the claimed combination.

For at least the reasons provided, claims 19, 20, 27, and 28 are therefore non-obvious in view of the cited prior art.

V. Claims 29 - 33 Are Patentable Over Davis in View of Baker and in Further View of Ando

The Applicant has been asked to show that claims 29-33 in this case are non-obvious in view of the combination of the Davis and Baker references and in further view of the Ando reference. The applicant respectfully submits that these claims, in view of currently amended claim 29, are non-obvious, for at least the reasons provided below.

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With regard to the third criterion of MPEP § 2142 set forth above, amended claim 29, from which claims 30-33 are dependent, recites a "plurality of semaphore register blocks" and a "selector coupled to said plurality of semaphore register blocks that enables monitoring contents in said plurality of register blocks," which neither the Davis reference nor the Baker reference discloses, nor does Ando make up for this deficiency. The rejected claims are non-obvious for this reason alone, notwithstanding the Davis reference, the Baker reference or the Ando reference. Additionally, claim 29 also recites "a limited-width test bus," which neither the combination of the Davis and Baker references nor the Ando reference discloses. The rejected claims are non-obvious for this additional independent reason, notwithstanding the combination of the Davis and Baker references or the Ando reference.

Furthermore, with regard to the first criterion of MPEP § 2142 set forth above, there is no teaching, suggestion, or incentive for one of ordinary skill in the art to combine the Davis and Baker references in further view of the Ando reference or to modify the Davis reference as the Office Action proposes, to arrive at the present invention. Neither the Baker reference nor the Ando reference are pertinent to the problem of a system for monitoring hardware resources by using semaphore registers via a limited-width test bus addressed by the present invention. The Ando reference discloses decoders 23, 24, 25, and 26 that are utilized to generate a signal to select a register in a register block as a bus destination or as a bus source in response to a microinstruction. See Ando, column 4,

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lines 16 - 47. These decoders are not utilized for "monitoring contents in said plurality of register blocks" as recited by amended claim 29.

For at least the reasons provided, claims 29-33 are therefore non-obvious in view of the cited prior art.

VI. Claims 3, 6, 16, 17, 21, and 23 Are Patentable Over Davis in View of Baker and in Further View of Flynn

The Applicant has been asked to show that claims 3, 6, 16, 17, 21, and 23 in this case are non-obvious in view of the combination of the Davis and Baker references and in further view of the Flynn reference. The applicant respectfully submits that these claims are non-obvious for at least the reasons provided below.

With regard to the third criterion of MPEP § 2142 set forth above, claim 1, from which claims 3 and 6 are dependent, recites "using a limited-width test bus whose bus width contains less than a number of bits needed to individually address each of said plurality of semaphore registers," which neither the Davis reference, the Flynn reference, nor the Baker reference discloses. Claim 1 also recites "monitoring contents of at least one of a plurality of semaphore registers," which neither the combination of the Davis and Baker references nor the Flynn reference discloses. The rejected claims are non-obvious for this independent reason, notwithstanding cited references.

Furthermore, amended claim 13, from which claims 16 and 17 are dependent, recites "arranging a plurality of semaphore registers into a plurality of semaphore

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register blocks" which neither the Davis reference, the Flynn reference, nor the Baker reference discloses. Additionally, the amended claim 13 also recites "selecting one of said plurality of semaphore register blocks to be accessed by a limited-width test bus for monitoring contents in said selected one of said plurality of semaphore register blocks," which neither the combination of Davis and Baker nor the Flynn reference discloses. The rejected claims are non-obvious for this independent reason, notwithstanding the cited references.

Additionally, claim 19, from which claims 21 and 23 are dependent, recites a "limited-width test bus [that] contains less than a number of bits needed to individually address each of said plurality of semaphore registers," which neither the combination of Davis and Baker nor the Flynn reference discloses. Additionally, claim 19 also recites "a plurality of semaphore registers," which neither the Baker nor the Davis reference nor the Flynn reference discloses. The rejected claims are non-obvious for this additional independent reason, notwithstanding the Flynn reference.

Furthermore, with regard to the first criterion of MPEP § 2142 set forth above, there is no teaching, suggestion, or incentive for one of ordinary skill in the art to combine the Davis, Baker and Flynn references or modify the Davis reference as the Office Action proposes, to arrive at the present invention. The Flynn reference is not pertinent to the problem of a method for monitoring hardware resources by using semaphore registers via a limited-width test bus addressed by the present invention. In fact, neither is the Baker reference. The Flynn reference discloses an "arbitration scheme permitting an SCU

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[system control unit] to efficiently arbitrate communications requests from various system ports." See Flynn, column 2, lines 37 – 45. The Flynn reference also discloses "a plurality of AND gates 172 each adapted to accept at its two inputs signals respectively indicating the availability and unreserved status of a particular [hardware] resource." See Flynn column 15, lines 54 - 61. However, the Flynn reference does not disclose or makes reference to the use of the AND gates for monitoring the contents of semaphore registers via a limited-width test bus as recited in independent claims 1, 3, and 19.

For at least the reasons provided, claims 3, 6, 16, 17, 21, and 23 are therefore non-obvious in view of the cited prior art.

VII. Official Notice of Claims 4, 5, 7, 8, 22, and 24

Applicant respectfully challenges the taking of Official Notice with respect to claims 4, 5, 7, 8, 22, and 24 as improper. Again, the issue is not whether individual elements in claim 4, 5, 7, 8, 22, and 24 are *individually* novel or non-obvious. The Examiner appears to have taken this perspective, which is erroneous. The issue is whether the *combination* of claims 4, 5, 7, and 8 with base claim 1, from which they depend, and any intervening claims, or the *combination* of claims 22 and 24 with base claim 19, from which they depend, and any intervening claims is novel or non-obvious. Applicant respectfully requests that Official Notice be withdrawn with respect to claims 4, 5, 7, 8, 22, and 24. Applicant respectfully requests that, if Official Notice is maintained in the next official communication, then the Examiner should produce further

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documentary support, not only for the claimed inventions as set forth in claims 4, 5, 7, 8, 22, and 24, but also for the claimed inventions in the contexts as set forth in claims 1, and 19 from which they depend.

"It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based." Accordingly, in order to maintain the rejection, Applicant respectfully requests that the Examiner produce references in support of the Examiner's contention or, if the Examiner is relying upon personal knowledge to support the finding of what is known in the art, then the Examiner must provide an affidavit or declaration setting forth specific factual statements and explanations to support the finding.

See, e.g., M.P.E.P. § 2144.03 and 37 C.F.R. § 1.104(d)(2).

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CONCLUSION

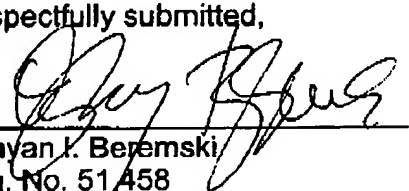
The Applicant has withdrawn claims 9, 10, 18, 25, and 26 and respectfully submits that new claims 34 - 38 correspond to claims 9, 10, 18, 25, and 26 rewritten in independent form including all of the limitations of the base claim and any intervening claims and are in condition for allowance. Based on at least the foregoing, the Applicant believes that all remaining claims are also in condition for allowance. If the Examiner disagrees, the Applicant respectfully requests a telephone interview, and requests that the Examiner telephone the undersigned Attorney at (312) 775-8232.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

A Notice of Allowability is courteously solicited.

Respectfully submitted,

Date: August 18, 2006


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